

Dr. John Kelly III

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NOAA Science Advisory Board

November 18, 2016



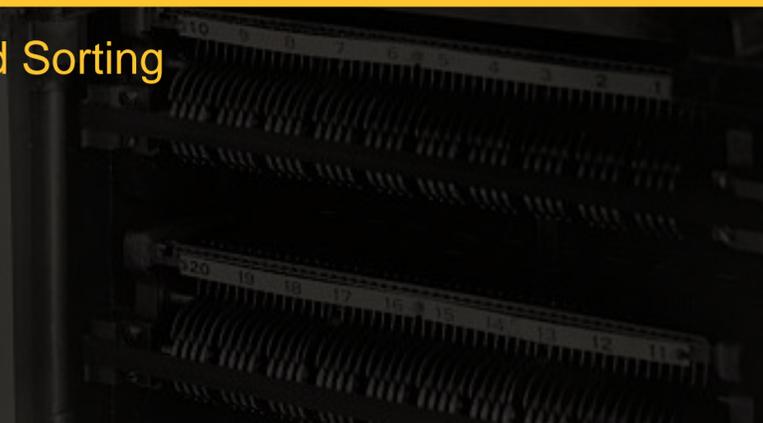


Tabulating Systems Era

1900 – 1940s

Counting and Sorting

- Sales
- Inventory
- Customers





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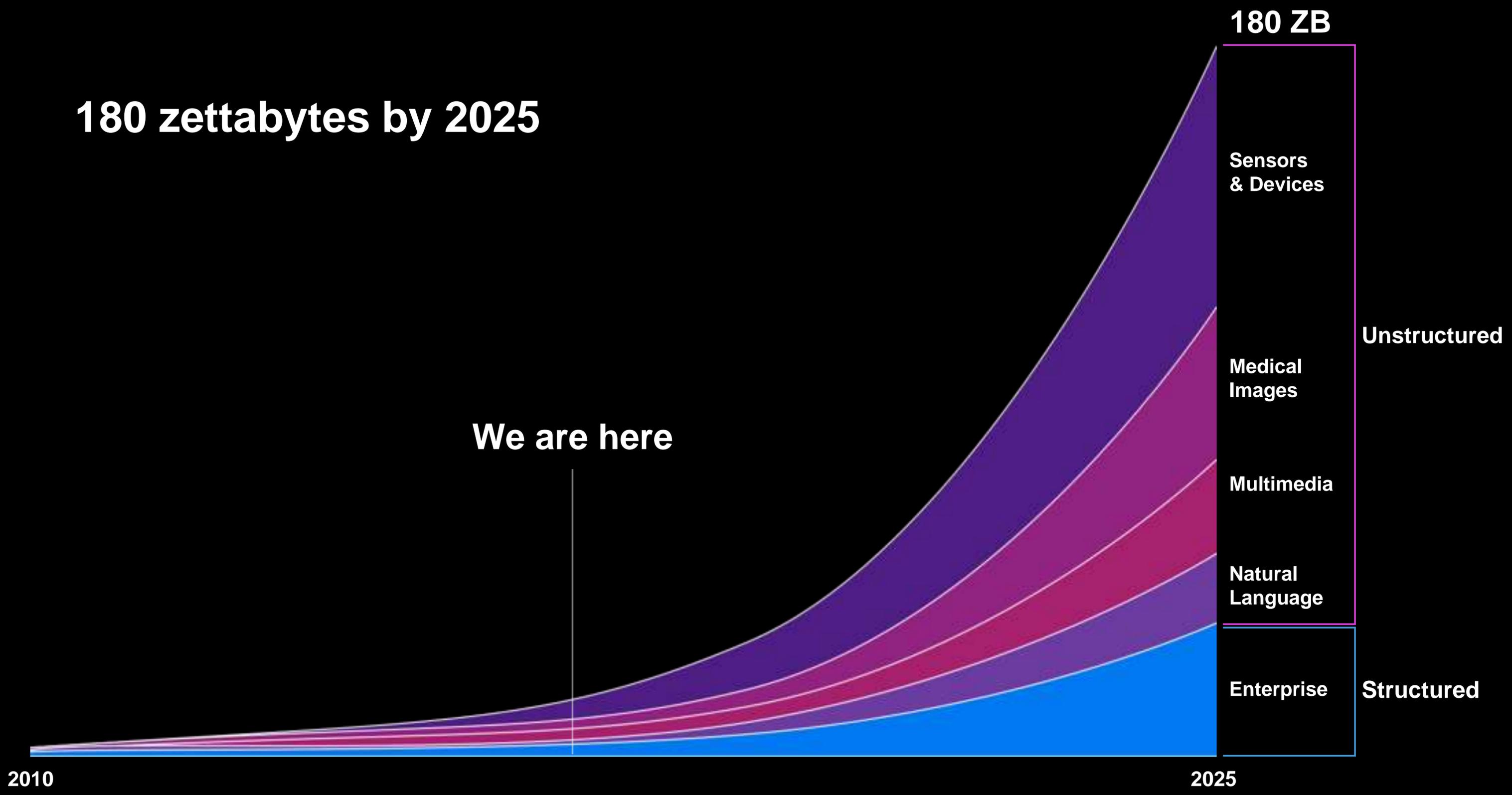
Programmable Systems Era

1950s – Present

Back-Office Transformation

- Accounting and Transactions
- Asset Management
- Pervasive Mobile Apps

180 zettabytes by 2025



180 ZB

We are here

2010

2025

Unstructured

Structured

Sensors & Devices

Medical Images

Multimedia

Natural Language

Enterprise

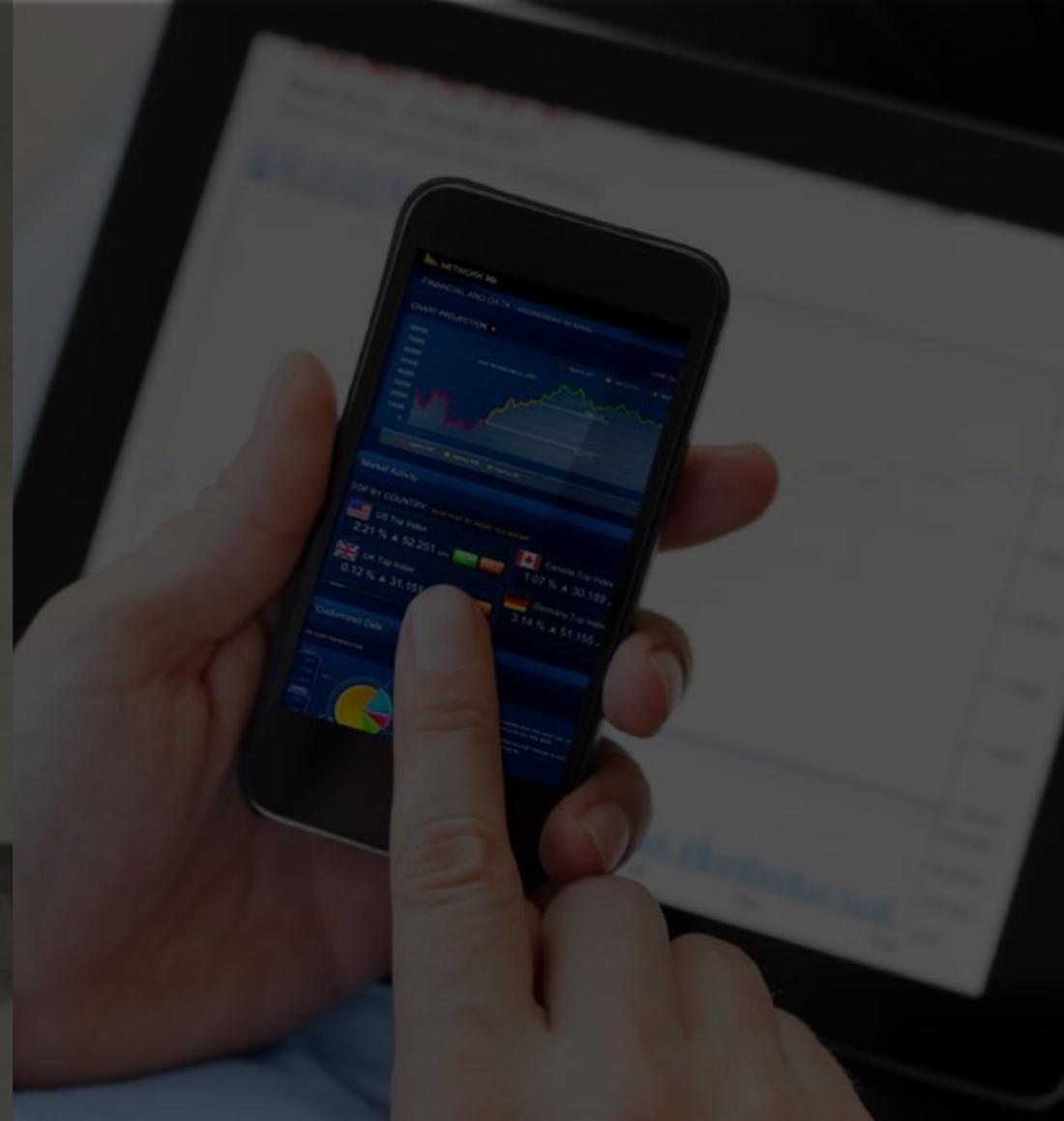


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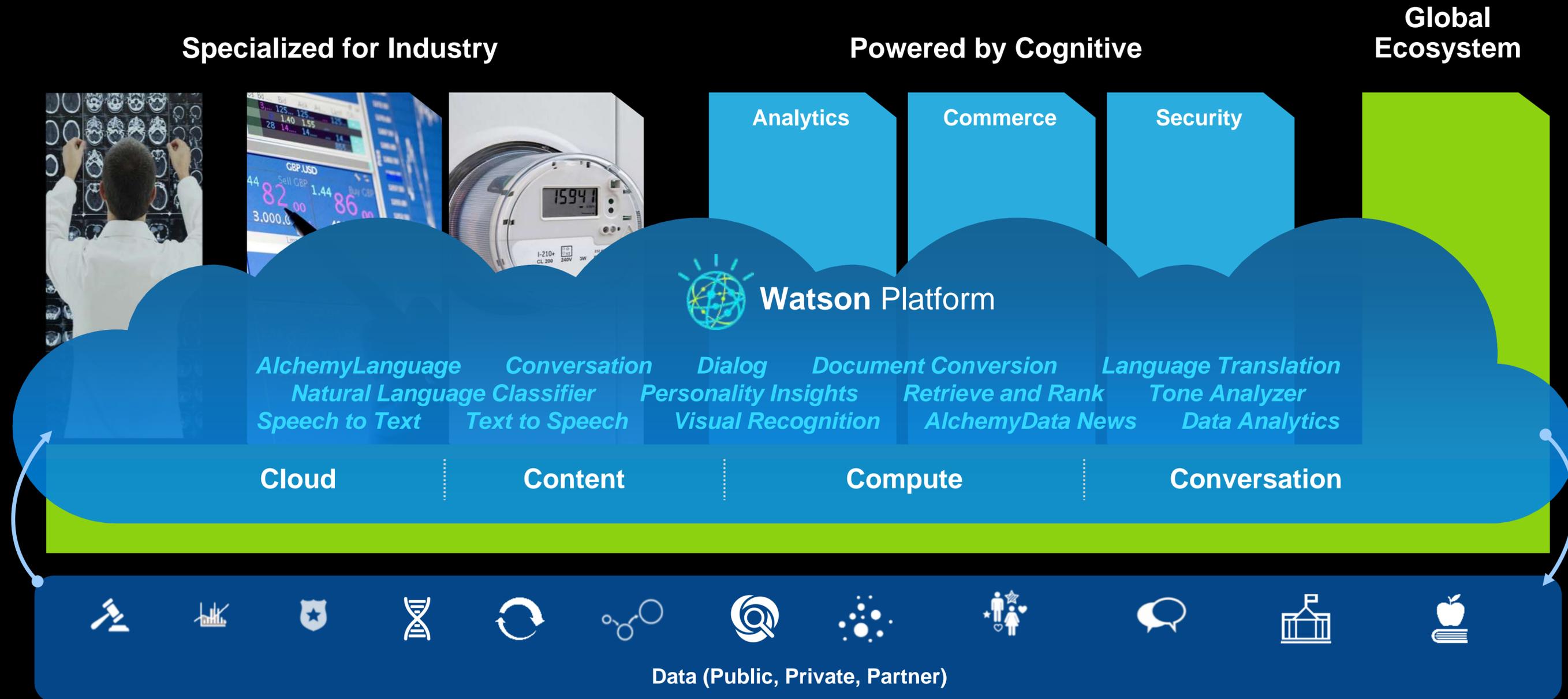
Cognitive Computing Era

2011 –

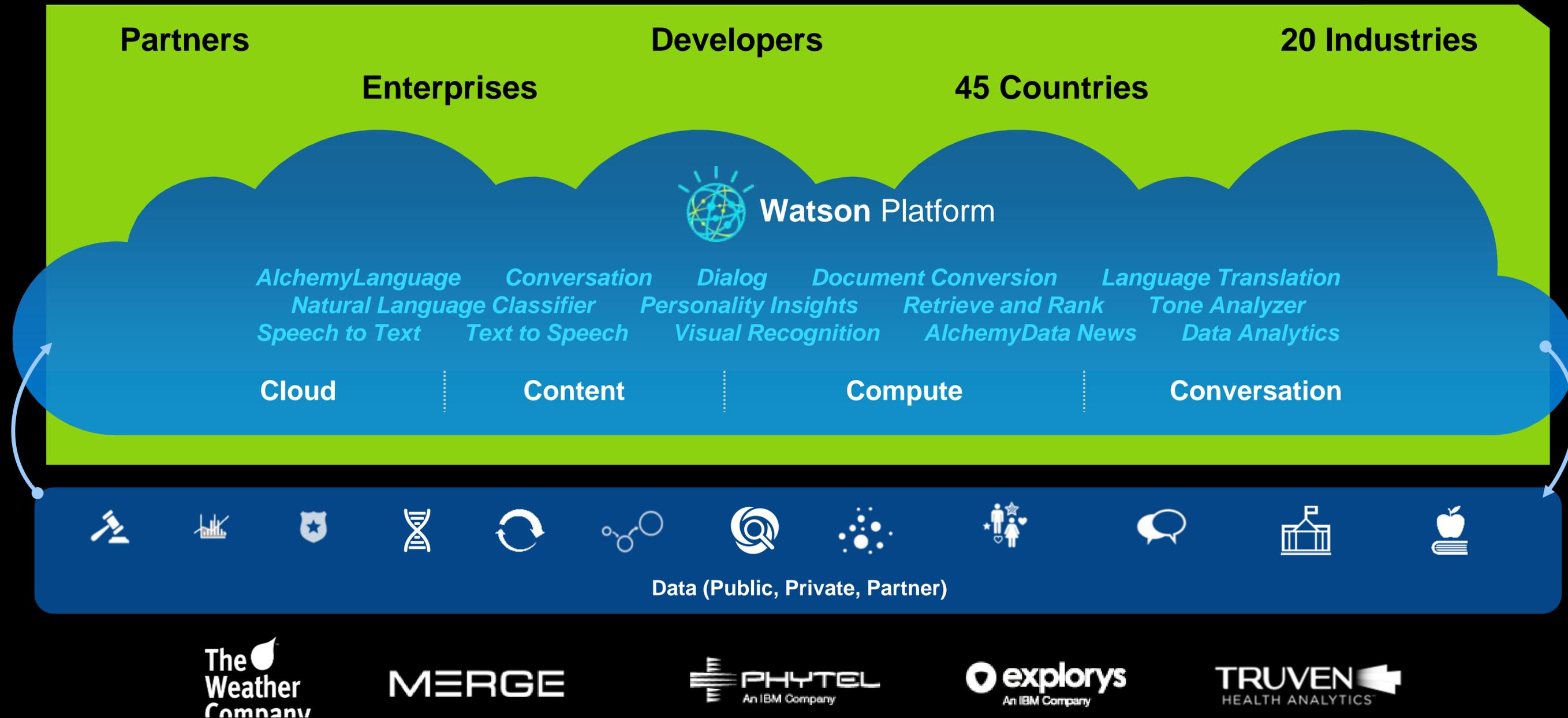
Augmenting Human Intelligence

- Learn at scale
- Reason with purpose
- Interact with humans naturally

A new business model



Building out a global ecosystem



Watson for Genomics Early Adopters and Partners



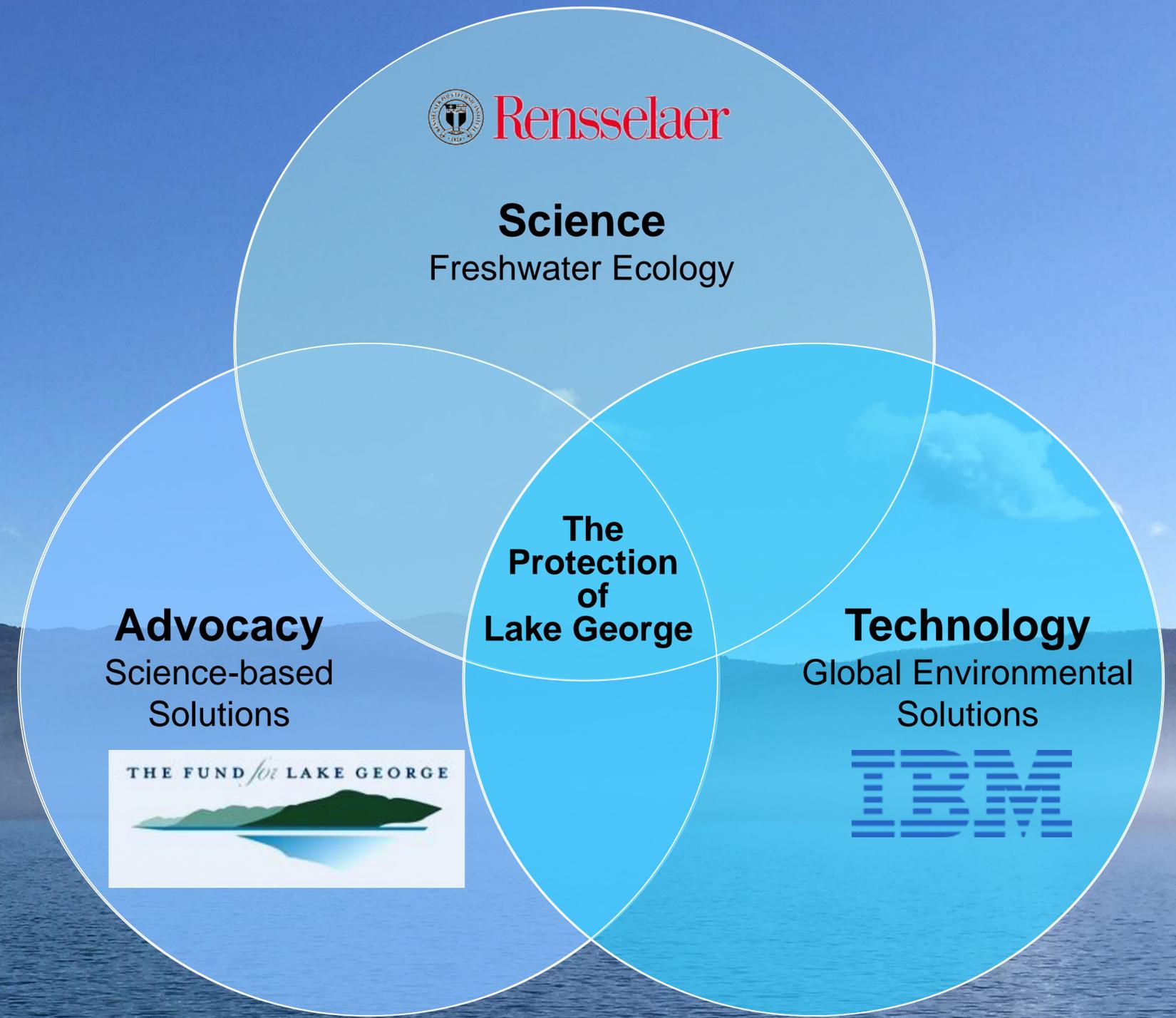
Keck School of Medicine of USC



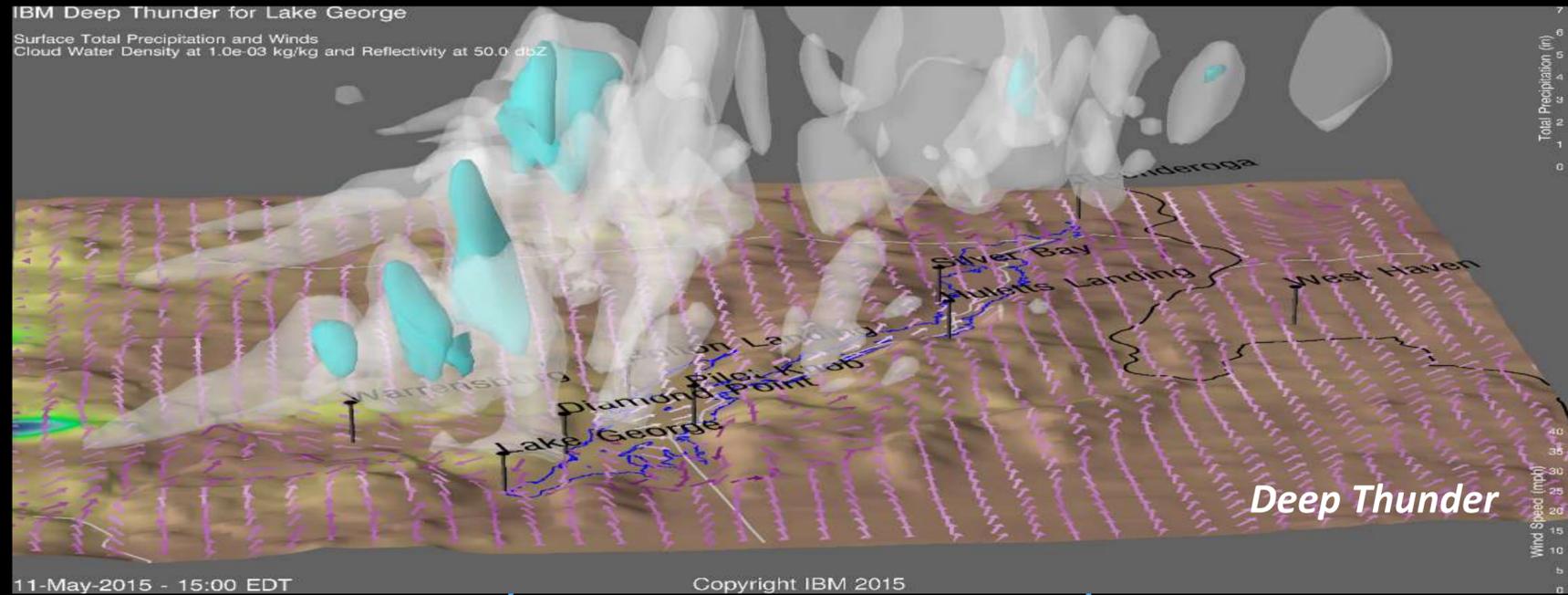
IBM Watson Genomics from Quest Diagnostics®



The Jefferson Project



Atmosphere

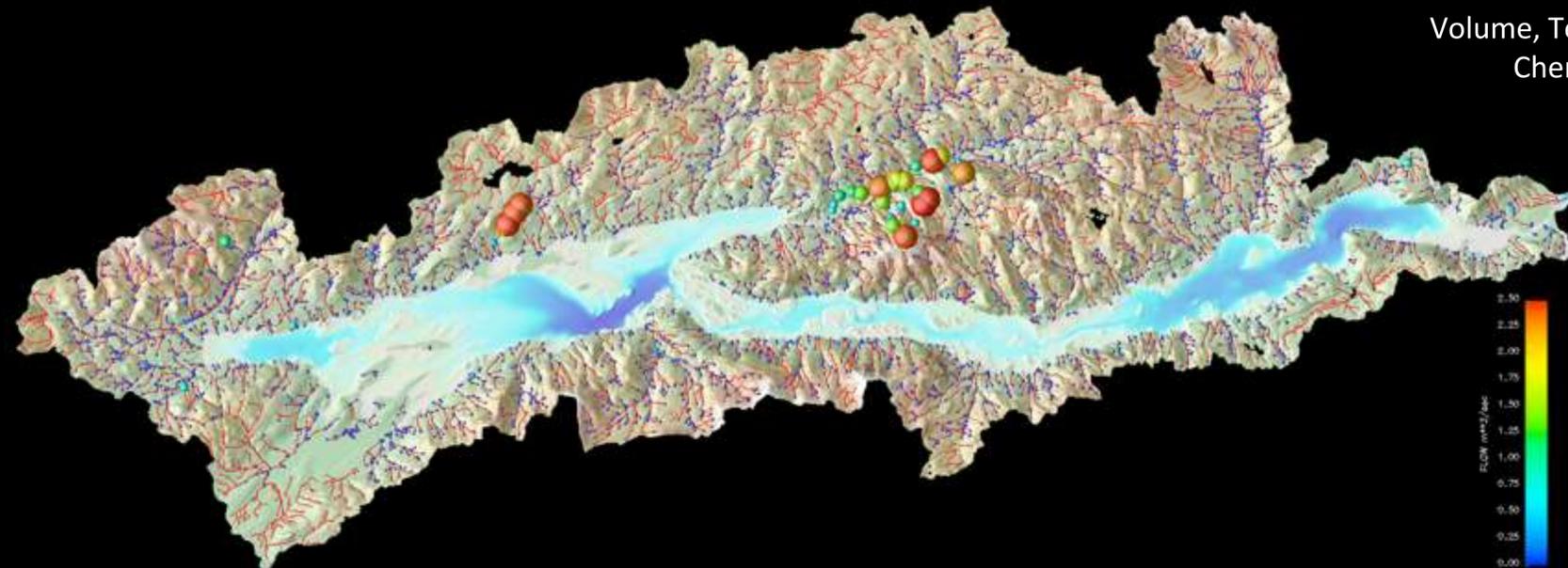


Precipitation,
Snow melt,
Temperature

Food Web

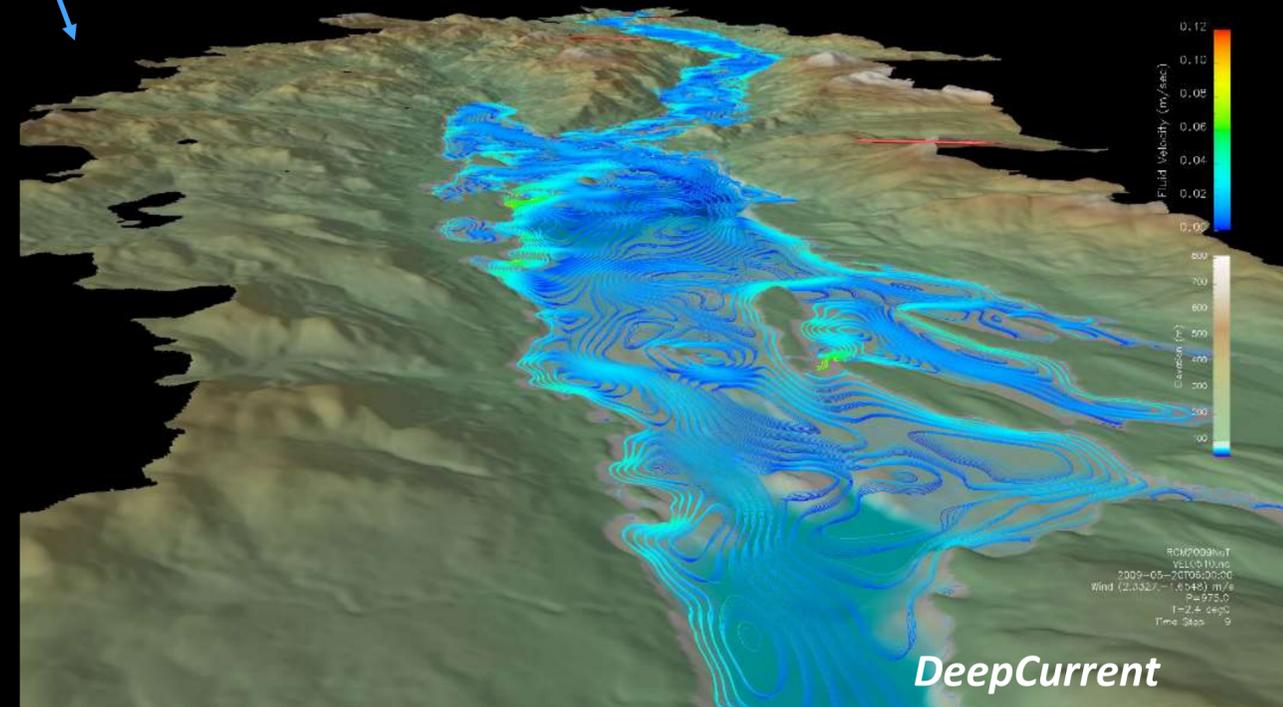
Volume, Temperature,
Chemistry

Wind, Radiation,
Precipitation, Temperature



Runoff

2010-03-07T03:45:00
Frame 45465
min 0.000000 max 5.970494



Circulation

2015/10/23 00:00:00Z

N/S Slice 120, E/W Slice 340
Vertical Exag. 20.00
95% of depth

Air Temp 286.45 (K @ 273.15)
Wind Speed (7.23, -0.93) (m/s)

Water
Temperature

Stream Flow

Air Stream and Water Temperature

Wind

Current
Velocity



Streamflow size is flow rate
Streamflow color is Temperature
Temperature Contours .5 degK from 280 to 300
Velocity Contours .01 m/s from -1 to .1

